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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,959	02/23/2004	Kurao Nakagawa	Q80036	7571
23373	7590	10/04/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			SOHN, SEUNG C	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/782,959	NAKAGAWA, KURAO	
	Examiner	Art Unit	
	Seung C. Sohn	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-13 is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                          |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                              | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                     | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>204</u> . | 6) <input type="checkbox"/> Other: ____.                                                |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. ***Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Lovelace et al. (Patent No. US 5,061,859).***

Regarding claim 1, Lovelace et al. shows in the Figure a photocurrent-to-binary signal conversion apparatus comprising: a light receiving element (18) for receiving a light signal so that a photocurrent in response to said light signal flows through said light receiving element; an amplifier (23), connected to said light receiving element, for converting said photocurrent into a detection voltage; a reference voltage generating circuit (27), connected to said amplifier, for offsetting said detection voltage on the side of said detection voltage to generate a reference voltage; and a comparator (30), connected to said amplifier and said reference voltage generating circuit, for comparing said detection voltage with said reference voltage to generate a binary signal in accordance with whether or not said detection voltage is higher than said reference voltage.

Regarding claim 2, Lovelace et al. shows in the Figure that said light receiving element (18) comprises a photodiode having a grounded anode.

**Regarding claim 3**, Lovelace et al. shows in the Figure that said amplifier (23) comprises a non-inverting amplifier, and said reference voltage generating circuit (27) comprises an inverting amplifier.

**Regarding claim 4**, Lovelace et al. shows in the Figure that said amplifier (23) comprises an operational amplifier (19) having an inverting input connected to said light receiving element (18), a grounded non-inverting input, and an output for outputting said detection voltage; and a negative feedback resistor (22) connected between the output and non-inverting input of said operational amplifier.

**Regarding claim 5**, Lovelace et al. shows in the Figure that said reference voltage generating circuit (27) comprises an operational amplifier (21) having a non-inverting input connected to said amplifier, an inverting input and an output for generating said reference voltage; a negative feedback resistor (26) connected between the output and inverting input of said operational amplifier; and a constant current source (24) connected to the inverting input of said operational amplifier and said negative feedback resistor.

***Allowable Subject Matter***

3. Claims 6-13 are allowed.
4. The following is an examiner's statement of reasons for allowance:

Claims 6-13 are allowable because the prior art fails to disclose or make obvious, either singly or in combination, a photocurrent-to-binary signal conversion apparatus comprising, in addition to the other recited features of the claim, "a reference voltage

generating circuit, connected to an intermediate stage of said amplifier, for offsetting a voltage at said intermediate stage on the side of said voltage at said intermediate stage to generate a reference voltage, said voltage at said intermediate stage having the same phase as said detection voltage”.

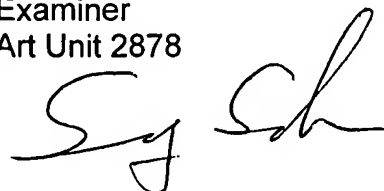
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seung C. Sohn whose telephone number is (571) 272-2446. The examiner can normally be reached on Monday through Friday from 8:30 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Seung C. Sohn  
Examiner  
Art Unit 2878

A handwritten signature in black ink, appearing to read 'Sg Sohn', is written over the printed name and title of the examiner.